SECTION L - INSTRUCTIONS, CONDITIONS AND NOTICES TO OFFERORS

ATTACHMENT L-4 – REPRESENTATIVE SAMPLE TASK

SAMPLE TASK FOR THE NATIONWIDE IDIQ UNRESTRICTED

1.0 Sample Task Description

This is a fictitious task to be performed at a fictitious U.S. Department of Energy (DOE) River Area Field Test Laboratory (RAFTL) (See Figure 1), located 20 miles northwest of Chicago, Illinois. The task involves removal of a building that contains a contaminated Hazard Category 2 nuclear facility, removal of associated radioactive and hazardous chemical contaminated soil, and development of a treatment strategy for contaminated groundwater. The objective of the task is the characterization, deactivation, demolition and removal (DD&R) of a building containing the Nuclear Hazard Category 2 Fuel Specimen and Material Research Hotcell Facility (FSMHF), removal of contaminated soils, and development of a groundwater treatment strategy for associated known and suspected plumes.

2.0 Performance Requirements

The IDIQ contractor is responsible for completing the following activities in support of Department of Energy (DOE) and regulator objectives, which are:

- restore lands to presumed residential standards;
- protect and/or reduce impacts to the environment and human health;
- safely remove mission surplus(or excess) facilities, those facilities DOE deems no longer needed to accomplish DOE's mission; and
- treat, store and dispose of all waste material within all federal and state regulatory requirements.

The period of performance is not to exceed fifty-eight months.

Government Furnished Services and Items (GFSI) include office space (including computer hookup and excluding phone landlines), utility hookups for trailers and specialized equipment; previous site characterization and monitoring data; pending regulatory decisions and/or project phase approval decisions (See Section 3.0, nos. 2 and 3; Sections 4.4 and 4.4.2); basic site security (site access control). No government-furnished property, other than the items indicated above, is intended to be provided for the Sample Task. Any equipment purchased specifically for the task, and charged to the task, shall become the property of the government and be managed in accordance with FAR 52.245-1, Government Property.

Additional details regarding specific task objectives are provided in the scope descriptions for each Task.

3.0 General Background

1. River Area Field Test Laboratory (RAFTL), located on approximately 422 acres in Lake County, 20 miles northwest of Chicago, Illinois, was developed as a remote site to conduct material science research development and non-destructive and destructive testing of research and commercial nuclear fuel specimens. The site is managed by an M&O contractor for the Department of Energy.

   The terrain is gently rolling, partially wooded former prairie and farmland. The geology of the area consists of about 100 feet of glacial drift on top of nearly horizontal bedrock consisting of shale underlain with older dolomites and sandstones. The glacial drift sequence is predominantly fine-grained clayey material but also contains sandy, gravelly or silty interbeds that may contain groundwater. Some of these layers are interconnected and provide a path for groundwater migration, while others are isolated and have limited potential for movement.

The dolomite, which is approximately 200 feet thick in the RAFTL area, is an aquifer used locally as a water supply, including drinking water, for low-capacity wells. Transmissivity values in the dolomite are typically 6,000 to 8,000 gallons per day per foot. The uppermost layers of the dolomite bedrock are known to be weathered in the vicinity of the site. Groundwater flow in this aquifer is primarily south to southeastward. This groundwater is considered Class I (highest quality).

No tectonic features within 50 miles of the site are known to be tectonically active.

No federally or state-listed threatened or endangered species are known to be present on the site or in its vicinity.

The average monthly and annual wind roses at RAFTL, at the 200 foot level, are shown on Figure 3. Average temperature and precipitation are shown in Table 1.

RAFTL continues to be an active site with ongoing research and development mission performed by DOE's Management and Operating contractor.

2. In 1963, the Fuel Specimen and Material Hotcell Facility (FSMHF) in F-wing of the Material Research Building (MRB) opened for operations. The FSMHF is a Category 2 Nuclear Facility**.** In 2008, research and development (R&D) work at FSMHF was terminated. The facility no longer functions to support R &D mission, and the entire MRB is excess to DOE needs. Operations in the FSMHF are now limited to those activities necessary for surveillance and maintenance (S&M). The other wings of the MRB are not nuclear facilities but, based on prior use, areas in several wings are radiologically contaminated (below Hazard Category 3). Characterization samples indicate that the FSMHF has contributed to soil and groundwater contamination with radionuclides (strontium-90) and hazardous chemicals (carbon tetrachloride, trichloroethylene [TCE] and tetrachloroethylene [also known as perchloroethylene {PERC}]).

   In 2007, an investigation into routine environmental monitoring results confirmed that groundwater contaminated with VOCs is present on the site in the vicinity of the MRB. The source of the contamination is suspected to be historic spills and leaks disposal associated with previous chemical cleaning and storage in that building. Sampling data show contamination of both the glacial drift and the dolomite aquifer below the site and off the site. In February of 2008, the site was placed on the CERCLA National Priorities List. A Federal Facility Agreement (FFA) is being negotiated among DOE, the Environmental Protection Agency, and the State of Illinois. The site has completed its initial investigations of soil and groundwater in the area pending finalization of the FFA.

   In 2009, more precise monitoring revealed strontium-90 (Sr-90) contamination in the glacial drift at levels several times drinking water standards. Testing (Figure 5) confirms elevated levels of Sr-90 southwest of the building, but the full extent of the plume has not been defined.

   The M&O contractor continues to conduct research on the site and is responsible for site-wide infrastructure operations. There is an occupied office building and a new research building in the vicinity of the FSMHF (Figure 4) as well as two major onsite roads. The closest direct access to a railroad is approximately 20 miles away.

3. DOE relationships with the stakeholders (regulators and local community) are tense Local public and regulators are outraged over the presence of previously unidentified groundwater plumes. Negative reporting regarding the site has begun in local and even national print media, and on local televised news as well as online blogs. In addition, the nature and extent of former nuclear research at the site was not clearly identified to, nor well understood by, the stakeholders. Although transportation of previous radioactive wastes and materials associated with the FSMHF

occurred without incident, the local community has become very fearful of radioactive exposure arising from demolition and additional materials and waste disposition. National interveners are pushing for an additional level of oversight beyond the requirements of CERCLA. DOE expects that an Environmental Impact Statement (EIS) will be required for the groundwater remedies as well as for the demolition of the MRB and FSMHF, since no EIS previously was prepared for the site.

4. For purposes of the Sample Task, offerors should assume that the Service Contract Act (SCA) and the SCA wage rates contained within Exhibit A, Wage Determination, apply to the work to be performed.

4.0 Material Research Building and former Fuel Specimen and Material Research Hotcell Facility

4.1 Stratigraphy and Groundwater Background of the Site

The stratigraphy of the soil beneath the area is made up of a 60 to 65ft. thick layer of fine-grained, predominantly clayey glacially deposited till materials situated above dolomitic bedrock with a soil density of approximately 110 pounds per cubic foot. The glacial till is composed of two distinct layers representing two separate glaciations. The upper layer consists primarily of fine-grained clay and silt, with coarse-grained zones interspersed within the clay matrix. The lower layer rests on the dolomitic bedrock and has larger, more extensive coarse-grained units. Some of the coarse-grained units in both layers are saturated with groundwater. The occurrence of coarse-grained units varies significantly from borehole to borehole. Most of the saturated coarse-grained units appear to contain perched groundwater that is migrating primarily downward. Some of the large units may be hydraulically connected over portions of the site. The uppermost contiguous aquifer is in the weathered zone directly above the dolomitic bedrock, approximately 60-70 ft below ground surface (bgs).

An extensive region of soil and shallow groundwater in the area adjacent and south of the MRB is contaminated with high levels of trichloroethylene (TCE) and tetrachloroethylene (perchloroethylene [PERC]). Soil and groundwater sampling locations are shown on Figure 2. Vertical extent of hazardous soil contamination was limited to ten feet or less below ground surface (bgs). Table 4 shows the detected values of hazardous chemicals in subsurface soil samples.

The current groundwater monitoring system associated with the MRB consists of 11 wells. Eight of the wells are completed in various porous glacial drift layers less than 40 ft. deep. Three wells are completed in the dolomitic aquifer about 70 ft. deep; wells MW-006D, 007D and 010D shown on Figure 2. Investigations identified groundwater contaminated with volatile organic compounds (VOCs), primarily carbon tetrachloride, TCE and PCE, at depths ranging from 30 to 40 feet bgs in the glacial drift (Table 5). Groundwater contamination above drinking water standards also has been found in the dolomite aquifer both onsite and offsite (Table 5).

In 2009, one of the groundwater monitoring wells south of the building (MW-SS-1) was replaced by a new well with a shorter screen, allowing more precise monitoring of the saturated zone within the glacial drift. Sampling of the new well revealed strontium-90 (Sr-90) contamination in the shallower portion of the glacial drift (about 20 feet bgs) at levels several times drinking water standards (drinking water standards are 8 pCi/l). Cone penetrometer testing (Figure 5) confirms elevated levels of Sr-90 southwest of the building, but the full extent of the plume has not been defined.

Soil sampling for radioactive contamination was performed at six locations outside the building (see Figure 12) and adjacent to the F wing. Samples were taken within a ten foot distance from the building, and at depths ranging from 3 to 10 feet. All soil samples contained significant amounts of strontium 90 (up to 1000 pCi/g), cesium 137 (up to 680 pCi/g), and several contained cobalt 60 (up to 243 pCi/g) and americium 241 (up to 860 pCi/g). The source, route and extent of this contamination have not been defined but may be associated with unidentified old drains or sewage pipes in the area. Contaminated soil adjacent to the building (and below the building if it occurs there) must be remediated during the project, with an expected requirement of meeting residential land use criteria despite planned continued industrial use at the site.

4.2 Material Research Building Background

The MRB (See Figure 5) is a 2-story building with 8 wings (identified as A-Wing through H-Wing). There is an underlying below grade basement, tunnel and storage area, including significant areas of fill (see appended as-built drawings). The MRB is primarily constructed of concrete floors, brick exterior walls, masonry interior walls, and a composite roof covering a concrete roof deck. The roof slab is supported by reinforced concrete and steel beams. All the wings of the MRB complex have a basement of comparable depth to the F-Wing basement. The facility is equipped with a lightening protection system consisting of roof top air terminals connected to conductors connected to ground. Please see As-builts 1 to 8 and Supplemental Figures 1 to 7.

Several items that provide support to MRB are located outside the building footprint such as a diesel generator, electrical power substation, and nitrogen tanks as shown on Figure 12. The fuel tank for the diesel generator is a 500 gallon, 3/16" steel tank which is empty. Other support systems are located within the MRB but outside the FSMHF footprint such as steam and water. The Fire Suppression System, which is located in the basement of the MRB, operates throughout the MRB except for the Hot Cells. Electrical power and communications systems are throughout the entire MRB. The MRB is serviced by many site-wide systems such as steam, water, electrical power and communications. FSMHF and associated office support space is about 6.5% (20,000 ft^2) of the total MRB space (304,572 ft^2*)* (the actual hot cell is approximately 12,500 ft^2)**.**

Each floor of the MRB (basement, ground floor and second floor) has a sprinkler system equipped with an isolation valve and water flow switch. These automatic wet pipe systems protect most areas of the building except for the FSMF Hot Cell itself and Rooms F-203 and F-204. The sprinkler systems are equipped with ordinary temperature, standard spray, quick-response sprinklers designed to operate and release water when the heat-sensitive element reaches a temperature of 165 degrees Fahrenheit. The flowing water activates the associated sprinkler system water flow switch connected to the fire alarm system to provide notification to building occupants, if any, and to the Fire Department.

The MRB consists of multiple wings (see Figures 6, 7 and 8). Other than the FSMHF all contaminated areas are below Hazard Category 3 and have no transuranic waste:

A-Wing 1st floor contains uncontaminated offices and a large uncontaminated conference room (A-157). A-Wing 2nd floor contains uncontaminated offices.

B-Wing 1st floor contains a building maintenance shop, offices, a lunchroom, and a locker room (all uncontaminated). B-Wing 2nd floor contains large locker rooms and a conference room (all uncontaminated).

C-Wing 1st floor contains uncontaminated offices, contaminated labs, uncontaminated training classrooms, and uncontaminated service areas. C-Wing 2nd floor contains uncontaminated offices, potentially contaminated labs with numerous fume hoods, and contaminated labs including a uncontaminated uranium machine shop and several contaminated small hot melt laboratories.

D-Wing 1st floor contains a glovebox facility along with other potentially contaminated labs, as well as uncontaminated offices, storage, and service areas.

D-Wing 2nd floor contains offices and computer labs (all uncontaminated).

E-Wing 1st floor contains uncontamined service and storage areas as well as a potentially contaminated cave and vault area. E-Wing 2nd floor contains offices and labs (all uncontaminated).

G-Wing 1st and 2nd floors contain offices and labs (all uncontaminated).

H-Wing 1st contains a contaminated facility previously used for milling, melting and casting of radioactive materials, primarily uranium, and a contaminated radiological machine shop for machining of radioactive materials, primarily uranium. H-Wing 2nd floor contains uncontaminated office spaces.

The MRB as a whole is known to have asbestos floor tile including asbestos mastic in laboratories, offices, corridors, and similar areas on the ground floor outside of the FSMHF area. The Offeror should assume that 300,000 square feet of radiologically contaminated asbestos tile and mastic needs to be removed from the MRB. There is also incidental asbestos associated with the F-Wing cooling tower. No other ACM containing material is present in the MRB. Sampling has not found any evidence of lead-based paint within the MRB, including the FSMHF. Due to the age of the facility, drains in the C wings are believed to be contaminated with mercury.

4.3 Fuel Specimen and Material Research Hotcell Facility Background

The FSMHF, located in the F Wing, is a contaminated Hazard Category 2 nuclear facility consisting of a very large hot cell facility; a materials fabrication area, which contains small hoods and lab space that were used for alloy preparation and casting, secondary fabrication, assembly and welding, and inspection services, and support gloveboxes, including shielded gloveboxes; a "Hot Machine Shop" for machining low-level contaminated or activated mechanical test specimens; the Electron Beam Laboratory (EBL); a decontamination repair area adjacent to the hot cell, and surrounding office space. The materials fabrication area includes the Electron Beam Laboratory (EBL) (Rooms F-117, F-117A, F-118, and F-188A) and the "Hot Machine Shop", also referred to as General Purpose Shop (Room F-109). The Hot Machine Shop (Room F-109) contains a lathe, a grinder, several work benches, and two fume hoods (47 in. by 40.5 in. by 96 in.)

The FSMHF is primarily a steel and concrete structure containing former operating areas, service areas, offices, and personnel access areas (See Figures 9, 10 and 11). The FSMHF was designed to perform research and development of nuclear reactor fuel components and materials, including handling, machining and polishing of plutonium and uranium.

A brief description of the rooms within the facility (as shown on Figures 6 and 10) is as follows:

F-101	Access corridor to the facility
F-102	Exit access corridor
F-103	Office
F-104	Men's rest room
F-105	Storage area (deactivated emergency decontamination shower)
F-106	Work space; provides access to Decontamination Repair Area (DRA) and equipment decontamination stalls

F-107	Corridor connecting F-106 and F-113 with access doors to F-101 corridor
F-109	Hot Machine Shop (General Purpose Shop)
F-110	Cell workstation and associated support area
F-111	Connecting space between Rooms F-106 and F-110
F-112	DRA work area
F-113	Cell workstation and associated support area
F-114	Ante-room, provides access to Cell F-131
F-115	DRA, provides access between Cell F-132 and DRA glovebox
F-116	Three stalls consisting of pump stall, filter stall, and spray chamber
F-117	Glovebox room
F-117a	Scanning Electron Microscope (SEM)
F-118	Microprobe Analyzer
F-118a	Auger Scanning Microprobe Room
F-118b	Storeroom with sink
F-118c	Radiation survey and step-off area, and former Microprobe computer
F-120a	Janitor's closet
F-121	Exit access corridor
F-122-127	Offices
F-131	Cell, subdivided by a gloved glass wall. Access to the clean side permitted repair activities to be conducted on equipment through the glove wall.
F-132	Area used to puncture fuel elements; collect and measure fission gases(nitrogen atmosphere); gamma scan (workstation 9)
F-133	Clean Transfer Area
F-134	Sample verification and photography room (nitrogen atmosphere)
F-135	Cutting, grinding and polishing workstations (see Figure 9): Workstation #4 is under nitrogen atmosphere

F-136	High temperature test apparatus, and waste inventory and packaging (nitrogen atmosphere)

Although many stored nuclear wastes and materials already have been removed, the FSMHF hot cell still contains waste and has significant contamination that needs to be addressed prior to demolition of the MRB.

The levels of contamination vary from area to area within the facility. The FSMHF was used for storage, as well as industrial, chemical, and radiological processes and testing. Known radiological risks at the FSMHF include, but are not limited to, uranium 238, uranium 235, strontium 90, and cesium 137, with smaller amounts of plutonium 235, plutonium 238, plutonium 241, plutonium 240, plutonium 239, and americium 241. Chemical hazards at the FSMHF include zinc bromide, carbon tetrachloride, TCE, and PCE. There are also minor amounts of lead incorporated into construction of the F-Wing (such as coatings on flashings and fascia). Radiation levels associated with some containers in the hot cell are in the range of 1 R/hour at container surface. An inventory of remaining known wastes in the FSMHF is provided in Table 7 consisting of a few containers with sealed sources that have not undergone DOT or ANSI testing and one-gallon paint cans of residues from previous work and prior hot cell floor cleanups, consisting of sample cutting and grinding residues, grinding papers, and dust. There are also suspected to be a number of samples in the within-floor storage tubes in Area 2.

The Nuclear Safety Analysis Report for the FSMHF was out of date and a Basis for Interim Operation and Technical Safety Requirements has been approved. These documents will have to be revised as appropriate to reflect the planned decontamination and demolition of the facility.

The 12,500 ft^2 multi-curie hot cell is equipped with remote handling equipment and a specialized containment system to provide a safe handling environment to facilitate work on the materials within the high dose rate and contaminated environment. Radiation levels in the hot cell range from 1 to 10 R/hour. No surface smears are available within the hot cell.

The hot cell walls, ceiling and floor are made of steel-encased magnetite concrete with steel reinforcing bars and are approximately 2 ft. to 3 ft. thick. There are four external shielding doors: Door 1, the door into the CTA from F-113; Door 2, the door between F-115 (DRA) and F-132 (Workstation 9); Door 3, the door into the Glove Repair Area (GRA) (F-131); and Door 10, the door in F-204 over the equipment hatch. Two of the doors (Doors 2 and 3) are made of 1 ft thick steel. Door 1 is made of steel-encased magnetite concrete with a total thickness of 3 ft. Door 10 (the horizontally mounted hatch shielding door in the ceiling) is made of a 23.25 inch steel shell enclosing concrete. Steel shield doors and transition areas separate Area 1 and 3. The wall between Areas 1 and 3 is made of magnetite concrete encased in steel. The barrier wall separating the CTA from Area 3 consists of stainless steel and laminated safety glass. This wall contains glove ports, push-throughs, bag ports, and other means to transfer areas in or out of Area 3. The other internal doors and walls are primarily made of steel.

There are twelve hot cell windows in Areas 1 and 3 (see Figure 9) with a combined volume of approximately 2,500 gallons of zinc bromide solution. Each hot cell window consists of a carbon steel shell with laminated safety plate glass on either side. The glass is sealed against the steel frame using a gasket. The inside of each window cavity also has safety glass sealed to the walls as physical protection for the inner tank glass. The steel frame is grouted to the hot cell for structural integrity. There are other penetrations through the FSMHF walls and ceilings for electrical leads and manipulators.

Principal research operations that occurred in Area 1 were destructive disassembly of small irradiated specimens, macroscopic examination, and preparation and examination of metallographic specimens. The primary activities that took place in Areas 3 and 3A were the nondestructive examination of fuel elements and other samples, waste classification and packaging, gas collections from fuel element specimens or containers, and specialized characterization tests.

Area 2 contains storage tube assemblies in fixed position wells in the floor of the cell. There are a total of thirty-four, 4in. diameter tube assemblies in one array and thirteen, 6 in. diameter tubes in another array. The openings of the storage tubes are about 2.5 in. above the floor level and the storage tube wells extend to 8 ft. below the floor. A removable steel floor plate is placed over the trench and around the storage tubes. Each tube assembly includes an integral steel plug at least 1 in. thick. It is not known if any irradiated samples still remain in the storage tubes, or if any of the storage tubes are contaminated. No activities, other than loading and unloading containerized samples, removing and replacing the storage tube assemblies in the storage tube wells, and replacing the metal cover over the storage tube wells, have taken place in Area 2.

Of the areas outside the hot cell, Area 4 (Figure 9) is part of the main floor area of the FSMHF. Offices are along the south side (F-122 to F-127) and F-102 and F-112 are hallways. The EBL contains a Scanning Electron Microscope (SEM) and two gloveboxes (F-117a); an unshielded glovebox and two shielded gloveboxes for sample preparation (F-117); a shielded electron microprobe (EMP) and its glovebox (F-118), and a scanning auger microprobe (SAM) and its associated glovebox (F-118A). The EMP is connected to the hotcell by a pneumatic specimen transfer system and contains a nitrogen atmosphere. The EMP glovebox is made from welded stainless steel sheet metal with windows sealed in place with a caulking compound Additional steel provides shielding around the glovebox. The three SEM-related gloveboxes in Rooms 117 and 117a are primarily made of aluminum and safety glass, with O-rings providing the seal between the frame and each panel or window. The two shielded gloveboxes in Room F-117 are similar in construction to the SEM gloveboxes but additional steel plates are provided on the sides, bottoms and tops of the shielded gloveboxes.

Smears inside the two shielded gloveboxes showed moderately high levels of beta/gamma contamination on the front surface (118,000 dpm/100 cm^2) and interior floor (12000 dpm/100 cm^2). Full scans for total surface activity of the shielded gloveboxes showed high levels of contamination, up to 1000,000 dpm/100 cm^2 beta/gamma and 2,000 dpm/100 cm^2 alpha. Smears inside the other five gloveboxes indicated beta/gamma levels of 8,000 to 10,000 dpm/cm^2 and 500 to 900 dpm/cm^2 alpha.

The DRA, in Area 6 (see Figure 9), provided an area for wet decontamination of moveable equipment and components that are free of gross amounts of fissile material. The areas between Rooms F-115 and F-116 have north and south outer walls shielded with the equivalent of 4 inches of steel. All other parts of the DRA are unshielded. The DRA operates at a negative pressure for contamination control. The exhaust system has dual high efficiency particulate air (HEPA) filters. . A nitrogen atmosphere is maintained for normal operations. The DRA communicates with the hotcell via a seal door and an outer shield door at the north face of Room F-132. The seal door has an inflatable seal to protect the inert atmosphere in the hotcell in the event that DRA is not operating with a nitrogen system. The seal door has a threshold that acts as a barrier to possible water spillage from the spray chamber (first area east of Room F-115). Water from the spray system was collected in a decontamination liquid storage tank. An integral, multi-station glovebox north and east of Room F-115 provided workspace for hands-on repair of decontaminated items.

Second-floor areas (see Figure 11) include a mechanical equipment and storage area (F-201); a fan loft (F-202) to house facility exhaust systems, nitrogen distribution piping, stack monitors, and a bridge crane that travel between F-202 and F-204; the plug access room (F-203) that contains shield plugs that communicate with Area 1 on the first floor (plugs include power and control circuits and gas lines and are double-sealed with a nitrogen gas purge between the seals); the hatch room (F-204) that contains a large hatch with a shield door that communicates with Area 3 on the first floor and allows large pieces of equipment to be installed or removed from the hot cell. The hatch is sealed with aluminum covers with gasket seals. A polyvinyl chloride pouch, affixed to the hatch body just below the gasketed cover in F-204, maintains separation of the environment in Area 3 from F-204 when both covers are removed. Room F-206 contains a work area for very lightly irradiated or contaminated structural or non-plutonium fissile specimens and includes laboratory equipment such as workbenches and microscopes and two fume hoods. The main nitrogen gas feed line for the hotcell is routed through this room and the adjacent chase .Rooms F-207 and F-208 are used for storage of spare manipulators, manipulator parts, containerized low-level radioactive wastes, and miscellaneous support parts and equipment for the FSMF. Second floor wall surfaces were found to have low levels of contamination (up to 60 dpm/100 cm^2 alpha and 1400 dpm/100 cm^2 beta/gamma . Floors were found to be lightly contaminated (100 to 500 dpm/100 cm^2 beta/gamma with the exception of isolated beta/gamma hot spots (up to 50,000 dpm/100 cm^2 beta/gamma). Exhaust systems have not been well characterized but are known to contain loose alpha contamination at above 5000 dpm/100 cm^2 and beta/gamma at about 20,000 dpm/100 cm^2.

The roof of the F-Wing supports an enclosure that houses two exhaust fans that support the Main Hot Cell Exhaust System. In addition to ventilation and exhaust systems, along with the hot cell structure itself, the entire MRB is supported by fire detection and alarm systems and a fire suppression system.

Safety Support Systems include ventilation and exhaust systems (negative pressure and double-stage HEPA filtration of the facility exhaust); the Hot Cell structure itself (including the windows) which is designed to shield 10,000 Ci of 1MeV gamma radiation; the High-Gamma Alarm System (which includes warning of window failure); the fire detection and alarm system (combination of heat and smoke detectors on first floor; smoke only on second floor);fire suppression system (automatic wet pipe sprinkler system except for hot cell itself and Rooms F-203 and F-204). There are no safety class Structures, Systems and Components (SSCs).

4.4 Task Scope

The Contractor shall perform services including, but not limited to, deactivation, decontamination, demolition and removal of a contaminated building and associated contaminated soil; , remediation of contaminated soil as required; characterization of the recently discovered VOC plume and suspected Sr-90 groundwater plume and development and design(s) of proposed groundwater remedy(ies); placement and removal of construction fencing as required; waste management including offsite disposition of remaining sources, disposal of all low-level radioactive waste (LLW), mixed low-level radioactive and hazardous waste (MLLW), hazardous waste, and clean industrial or sanitary wastes; all activities required to support disposal of transuranic wastes to the DOE Waste Isolation Pilot Plant (WIPP) facility; and preparation of all associated project and regulatory documentation and public outreach planning to support DOE at River Area Field Test Laboratory (RAFTL) site. All work shall be conducted in accordance with the requirements of this Task Order and the requirements of the basic contract.

The required end state is removal of a building with contaminated areas including a contaminated Hazard Category 2 facility; clean up of associated contaminated soils, development of an acceptable groundwater cleanup strategy for the VOC plume and suspected Sr-90 plume and design(s) of the proposed remedy(ies), restoration of the affected demolition and soil excavations, and offsite disposal of the resulting wastes and materials. An acceptable groundwater cleanup strategy is defined as an approach that will meet MCLs at Outer Circle Road within 10 years of the beginning of groundwater treatment. The contractor is to apply its expertise to determine the appropriate groundwater strategies and resulting design(s) and the necessary decontamination and demolition techniques, and ensure that the methods used are compliant with all applicable laws and requirements referenced in the PWS.

The regulators will require that the site remove contaminated soil in accordance with assumed cleanup objectives (and dispose the soil offsite at a properly permitted disposal facility) and achieve Illinois Class 1 organic standards for groundwater and safe drinking water standards for Sr-90 at the Outer Circle Road (Figure 1). Current maximum soil and groundwater contaminant levels are shown respectively in Tables 3, 4 and 5. The approximate extents of soil and groundwater contamination are shown in Figures 2 and 5. The Illinois Class 1 Organic standards are provided in Table 6.

Task scope includes the following:

- Regulatory report writing including as appropriate:
  - Remedial Investigation
  - Risk Assessment
  - Feasibility Study
  - Remedial Action Plan
  - Public outreach plan
- Removal and offsite disposal of contaminated soil;
- Characterization of groundwater plumes, development of groundwater strategies, and design(s) of proposed groundwater remedy(ies);
- Proposed groundwater plume remediation and DD&R must be incorporated within the EIS.
- Support to DOE in regulatory interactions including Record of Decision development and public outreach activities; and
- Preparation of required project and safety documentation in accordance with DOE Order 413.3A,standard practices, 10 CFR 830, Appendix A, DOE Order 420.1B, and DOE-STD-1020-2002, 1027-92, 1120-2005, 3009-94 (change 3), and 3011-2002, including but not limited to the following:
  - performance baselines;
  - resource-loaded schedules;
  - risk management plan;
  - revised Basis for Interim Operations (BIO), Technical Safety Requirements and Deactivation Plan;
  - health and safety plan;
  - radiation control plan, including As Low As Reasonably Achievable (ALARA) analyses;
  - quality assurance plan;
  - decontamination plan;
  - demolition plan;
  - air permits as required for selected demolition approach (prior to demolition);
  - final status survey plan (prior to Independent Verification survey);;
  - final status survey report (prior to Independent Verification survey and site restoration);

- final project report including lessons learned (prior to project completion);
- waste manifests(during project execution); and
- formal monthly project status reporting including earned value reporting (during project execution).

- offsite disposition of remaining FSMHF inventory waste and materials;
- deactivation, demolition and removal of contaminated facilities associated with the FSMHF;
- removing all radioactively contaminated equipment and space; decontaminating the MRB structures as necessary for safe demolition;
- decontaminating and/or removing gloveboxes and experimental equipment as necessary to support demolition;
- excavation, removal and offsite disposal of contaminated soil associated with the building, in accordance with provided assumptions;
- completing demolition of the entire building including the hot cell and associated lab and support space, non-contaminated facilities associated with the balance of the MRB, and offsite disposition of all wastes and debris;
- completion of final status surveys (using the Multi-Agency Radiation Survey and Site Investigation Manual [MARSSIM] protocols) in advance of Independent Verification Surveys (arranged by DOE) prior to site restoration
- removal of all temporary fencing and equipment required for execution of the task; and
- restoring the building excavation and other disturbed areas to grade, properly compacted and reseeded with native vegetation.

Under the Task order, the Contractor shall provide any associated reports that are determined by the Offeror to be applicable for DD&R of contaminated excess facilities and the other documents/reports, as summarized above.

Note: For purposes of the sample task, it is expected that the Offeror will provide a listing and summarized contents of the required documents.

NOTE: DOE is not specifying a particular technical approach to this scope. The Offeror should propose a technical approach for safe and cost-effective execution of project scope.

4.4.1 Task Completion Criteria

Task order completion will be achieved when the following are accepted by DOE as complete:

- Soil remediation and DD&R strategies have been implemented and groundwater remediation strategies have been proposed, have been found acceptable to DOE, the Environmental Protection Agency (EPA) and the State of Illinois, and have been designed.

- FSMHF, MRB, and associated contaminated soil are removed safely and compliantly and disposed offsite.

Building removal includes removal of all associated building utilities, equipments, drains, piping, and structures (including footings and foundations). The final excavation will be subject to an Independent Verification Survey prior to backfill and site restoration.

- The building excavation and other disturbed areas are restored to grade, properly compacted, and reseeded with native vegetation.

- The expected project goal at close of building demolition and disposal and radioactive soil remediation is for a hypothetical onsite resident to receive a dose not to exceed 15 mrem/yr from residual radioactive contamination left in the soil, using the regulator-specified scenario.

The expected project goal for the proposed groundwater remediation strategies will be to achieve drinking water standards within 10 years of beginning of groundwater treatment for the VOC plume and suspected strontium-90 plume at the Outer Circle Road (Figure 3).

- All final reports have been completed and approved by DOE.

4.4.2 Environment, Safety and Health Requirements

If the Offeror intends to dispose of materials as non-radioactive waste, then building materials may be radiologically released to the following criteria and confirmation sampling in accordance with MARSSIM would need to be proposed:

- Surface contamination below the values in DOE 5400.5, (2-8-90), “Radiation Protection of the Public and the Environment. Figure IV-1 Surface Contamination Guidelines.
- Direct exposure pathways at or below 20 µrem/hr greater than RAFTL site average background levels of 87 (+/- 3) mrem/year.

- The project goal for members of the public is a dose not to exceed 10 mrem/year as a result of airborne emissions during demolition. The expected project goal at close of building demolition and disposal and radioactive soil remediation is for a hypothetical onsite resident to receive a dose not to exceed 15 mrem/yr from residual radioactive contamination left in the soil, using the regulator-specified scenario.

DOE’s cleanup goals for chemical remediation are as follows:

- Reduce cancer risk to 1×10^{-4}
- Reduce non-cancer risks to a Hazard Index of 1
- Lower of Maximum Contaminant Levels (MCLs) or other drinking water levels (Illinois Class I standards) based upon toxicity, taste and odor

The expected outyear goal for the proposed groundwater remediation strategy will be to achieve drinking water standards at the Outer Circle Road (Figure 3) within ten years of the start of the groundwater remedy.

Anticipated soil concentration guidelines for remediation of contaminated soil associated with the FSMHF are shown in Tables 3 and 4.

Summary of Assumptions

- Assume that groundwater must be cleaned up to achieve Illinois Class 1 organic standards for groundwater and safe drinking water standards for Sr-90 at the Outer Circle Road.

- Assume a week for the required DOE Independent Project Review (IPR) or External Independent Review (EIR) of the project baseline and associated documentation prior to DOE approval of combined Critical Decisions 2/3 (baseline approval and start of execution phase), in accordance with DOE Order 413.3A.

- Assume that the project baseline and all supporting documentation must be provided to DOE a minimum of one week before the IPR is held or a minimum of two weeks before the EIR is held.

- Assume that draft regulatory documents must be submitted to DOE for review and probable revision by the contractor, prior to DOE's submittal to the regulators.

- Assume a minimum of two weeks for DOE review of draft documents and a minimum of 30 days for regulatory review and approval of revised documents including DOE's submitted Record of Decision.

- Assume soil will need to be brought onsite from an outside source for backfilling excavations.

- Utilities are to be removed to the closest road or parking lot. The removal termination point for electrical is the Outer Circle road shown in Figures 3, 4, and 11. The removal termination point for drains, water, and steam is through B Wing to the Inner circle Road shown in Figures 3 and 4.

- Requirements of the National Environmental Policy Act (NEPA) for soil removal will be met by following the CERCLA process.

- Groundwater plume remediation and DD&R must be incorporated within the EIS.

- MRB does not provide electrical or other utility support to other buildings on site.

- Assume that any remote-handled (RH) or contact-handled (CH) transuranic (TRU) wastes have a defense origin, based on approved Acceptable Knowledge determinations, and will be accepted by DOE's Waste Isolation Project Plan (WIPP) for disposal.

- LLW and MLLW are disposed at a commercial licensed radwaste disposal facility.

- Hazardous wastes are disposed at a properly permitted disposal facility.

- Clean wastes (such as non-contaminated debris) are disposed at a sanitary or industrial waste facility.

- Assume that contaminated soil must be removed in accordance with assumed soil cleanup criteria (Tables 3 and 4) and disposed at a properly permitted disposal facility.

- DOE policy precludes any release of metals from radiological controls from radiologically posted areas for recycling as non-radioactive material.

- Assume that 300,000 square feet of radiologically contaminated asbestos tile and mastic needs to be removed from the MRB.
- Assume paint has no hazardous constituents (including but not limited to lead and PCBs.)
- Assume that there are no expansion joints in the MRB.
- Assume the M&O contractor provides access to utilities including electrical and water for dust or fire suppression, steam, and communications systems

5.0 Sample Task Deliverables List

	Deliverable/Milestone Description	Contract Reference	Due Date	Information or Approval	Frequency	Source
1	Integrated Safety Management System (Description)	PWS C.2	Within thirty calendar days from Task Order award	approval	once	DOE M 450.4-1, and DOE G 450.4-1B
2	Radiation Protection Program (including implementing procedures)	PWS C.2	Within ninety calendar days of Task Order award	approval	once	10CFR 835, DOE STD 1098-99 including Change 1, DOE G 441.1-1B
3	Worker Safety and Health Program (including implementing procedures)	PWS C.2	Within sixty calendar days of Task Order award	approval	once	10CFR 851, DOE G 440.1-8
4	Conduct of Operations Program	PWS C.2	Within ninety calendar days of Task Order award	approval	once	DOE O 5480.19 Change 2
5	Corporate Operating Experience Program	PWS C.2	Within sixty calendar days of Task Order award	approval	once	DOE Order 210.2
6	Environmental Protection Program	PWS C.2	Within ninety calendar days of Task Order award	approval	once	DOE O 450.1A
7	Waste Management Program	PWS C.2	Within ninety calendar days of Task Order award	approval	once	DOE 435.1 incl. Change 1, DOE M 435.1-1 incl change 1
8	Quality Assurance Program	PWS C.2	Within sixty calendar days of Task Order award	approval	once	ASME NQA-1 2004, including 2007 addenda for Deactivation and Decommissioning (D&D)
9	Contractor Assurance Program	PWS C.2	Within 120 calendar days of award	approval	once	10 CFR 830.120, DOE O 414.1C, DOE O 226.1

	Deliverable/Milestone Description	**Contract Reference**	**Due Date**	**Information or Approval**	**Frequency**	**Source**
11	Risk Assessment	Sample Task Section 4.4	Per DOE Approved Schedule	approval	Once (per subtask)	CERCLA Regulations and Requirements
12	Remedial Investigation/Feasibility Study	Sample Task Section 4.4	Per DOE Approved Schedule	approval	Once (per subtask)	CERCLA Regulations and Requirements
13	Remedial Action Plan	Sample Task Section 4.4	Per DOE Approved Schedule	approval	Once (per subtask)	CERCLA Regulations and Requirements
14	Public Outreach Plan	Sample Task Section 4.4	Per DOE Approved Schedule	approval	Once (per subtask)	CERCLA Regulations and Requirements
15	Environmental Impact Statement	Sample Task Section 4.4	Per DOE approved schedule	approval	once	
16	Resource loaded schedule	Sample Task Section 4.4	Per DOE Approved Schedule	approval	once	DOE O 413.3A and DOE Guidance documents
17	Risk Management Plan	Sample Task Section 4.4; Clause H.13	Within 120 days of Task Order Award	approval	once	DOE O 413.3A and DOE Guidance documents
18	Performance Baseline	Sample Task Section 4.4; Clause H.13	Within 120 days of Task Order Award	approval	once	DOE O 413.3A and DOE Guidance documents
19	Project Schedule	Sample Task Section 4.4	Within 120 days of Task Order Award	approval	once	
20	Hazard Analyses	Sample Task Section 4.4		information	As needed	10 CFR 851, 29 CFR 1910 and 1926, DOE STD 1120-2005

	Deliverable/Milestone Description	**Contract Reference**	**Due Date**	**Information or Approval**	**Frequency**	**Source**
21	Nuclear Hazard and Accident Analyses; Revised Basis for Interim Operations	Sample Task Section 4.4	Per DOE Approved Schedule	approval	once	10 CFR 830, Appendix A, DOE Order 420.1B, and DOE-STD-1020-2002, 1027-92, 1120-2005, 3309-94 (change 3), and 3011-2002
22	Final Project Report (Soil and ground water cleanup)	Sample Task Section 4.4	Per DOE Approved Schedule	approval	once	CERCLA Regulations and Requirements
23	Waste Manifests	Sample Task Section 4.4	Day of shipment	For information	As needed	49 CFR (DOT), 40 CFR Series
24	Monthly Project Reports	Sample Task Section 4.4; Clause H.13	15th calendar day each month for the preceding month	For information	monthly	DOE O 413.3A and DOE Guidance documents
25	Decontamination Plan	Sample Task Section 4.4	Within 120 days of Task Award	approval	once	Industry practice compliant with DOE Order 5400.5, Contractor approved RPP and WSHP, DOE STD 1120-2005
26	Demolition Plan	Sample Task Section 4.4	Within 120 days of Task Award	approval	once	DOE Order 5400.5, Contractor approved RPP and WSHP, DOE STD 1120-2005
27	Final Status Survey (and Confirmation Sampling and Analysis Plan)	Sample Task Section 4.4	Per DOE Approved Schedule	Review and Comment	once	MARSSIM
28	Final Status Survey Report	Sample Task Section 4.4	Per DOE Approved Schedule	Review and Comment	once	MARSSIM
29	Final Project Report (D&D)	Sample Task Section 4.4	Per DOE Approved Schedule	Review and Comment	once	DOE Guide 413.3-16
30	Meeting Minutes with Regulators, Public Officials, and Public		As occurs	Review and comment	As needed	Contractor practices

	Deliverable/Milestone Description	**Contract Reference**	**Due Date**	**Information or Approval**	**Frequency**	**Source**
31	Emergency Preparedness Plan		Per DOE Approved Schedule	Approval	Once	29 CFR 1910.120, and specifically up to 1910.120.(q)(6)iii for Hazardous Material Technician for response team capability.
32	Erosion & Sediment Control		Per DOE Approved Schedule	DOE Review and Comments, regulatory approval		Per state requirements if required
33	DOELAP Dosimetry Applications (includes technical basis documents, implementing procedures, and quality assurance plan)		Per DOE Approved Schedule	DOE LAP approval	If required	10 CFR 835,
34	Price Anderson Act Program		Per DOE Approved Schedule	approval	once	10 CFR Part 835
35	Waste Characterization information		Not applicable	information	Upon request	DOE 435.1, 40 CFR series, Disposal facility requirement.
36	Site Operations Procedures		As needed	information	Upon request	10 CFR 851, 29 CFR 1910 & 1926
37	Work Packages		As needed	information	Upon request	Radiological Protections Plan, Worker Safety and Health Plan, Contractor requirements
38	Radiological Work Permits		As needed	information	Upon request	Radiological Protections Plan, Contractor requirements
39	Local Permits		As needed	information	Upon request	10 CFR 851, 29 CFR 1910 & 1926, state regulations

Sample Task Figures and Tables

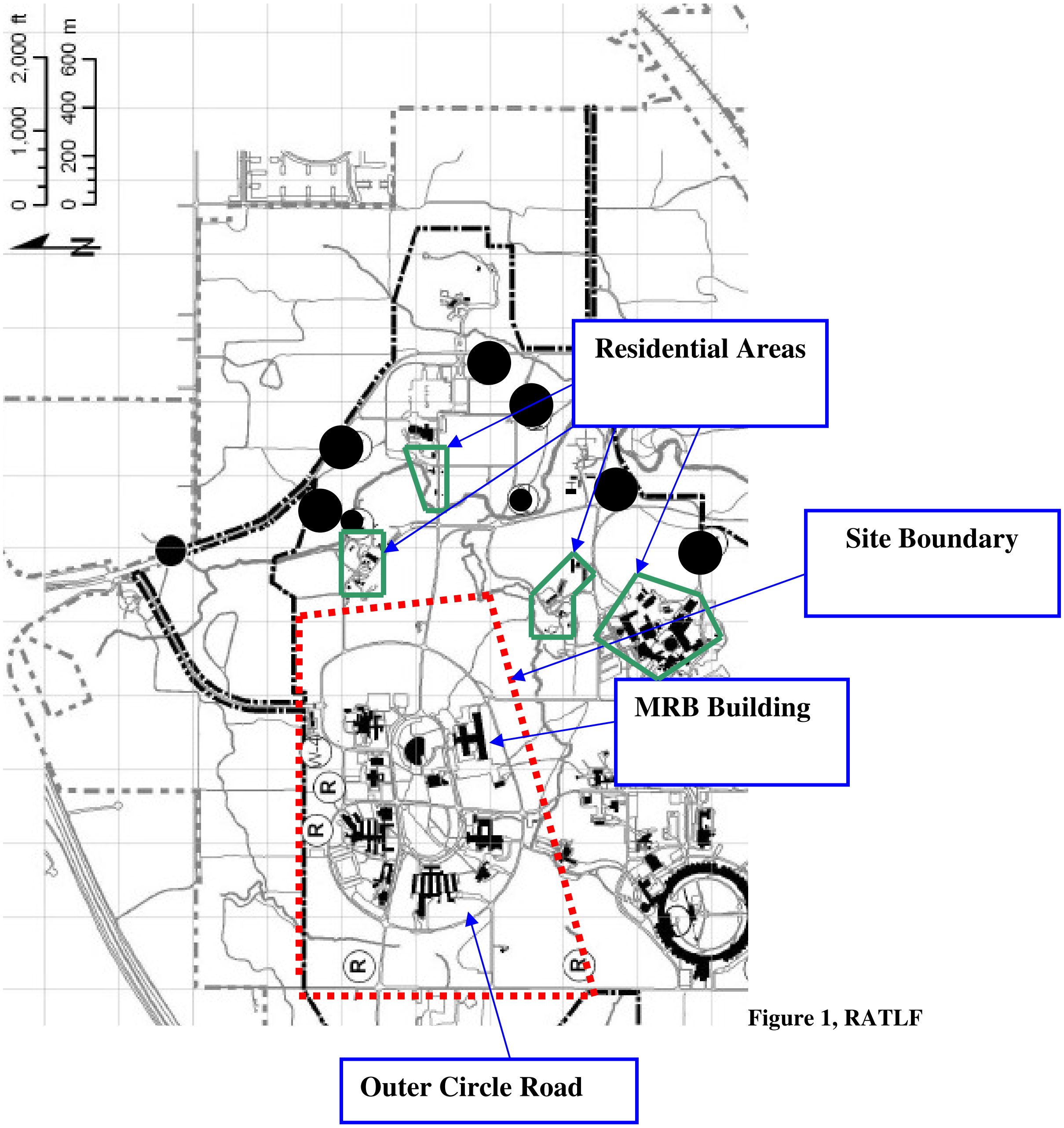


Figure 1, RATLF

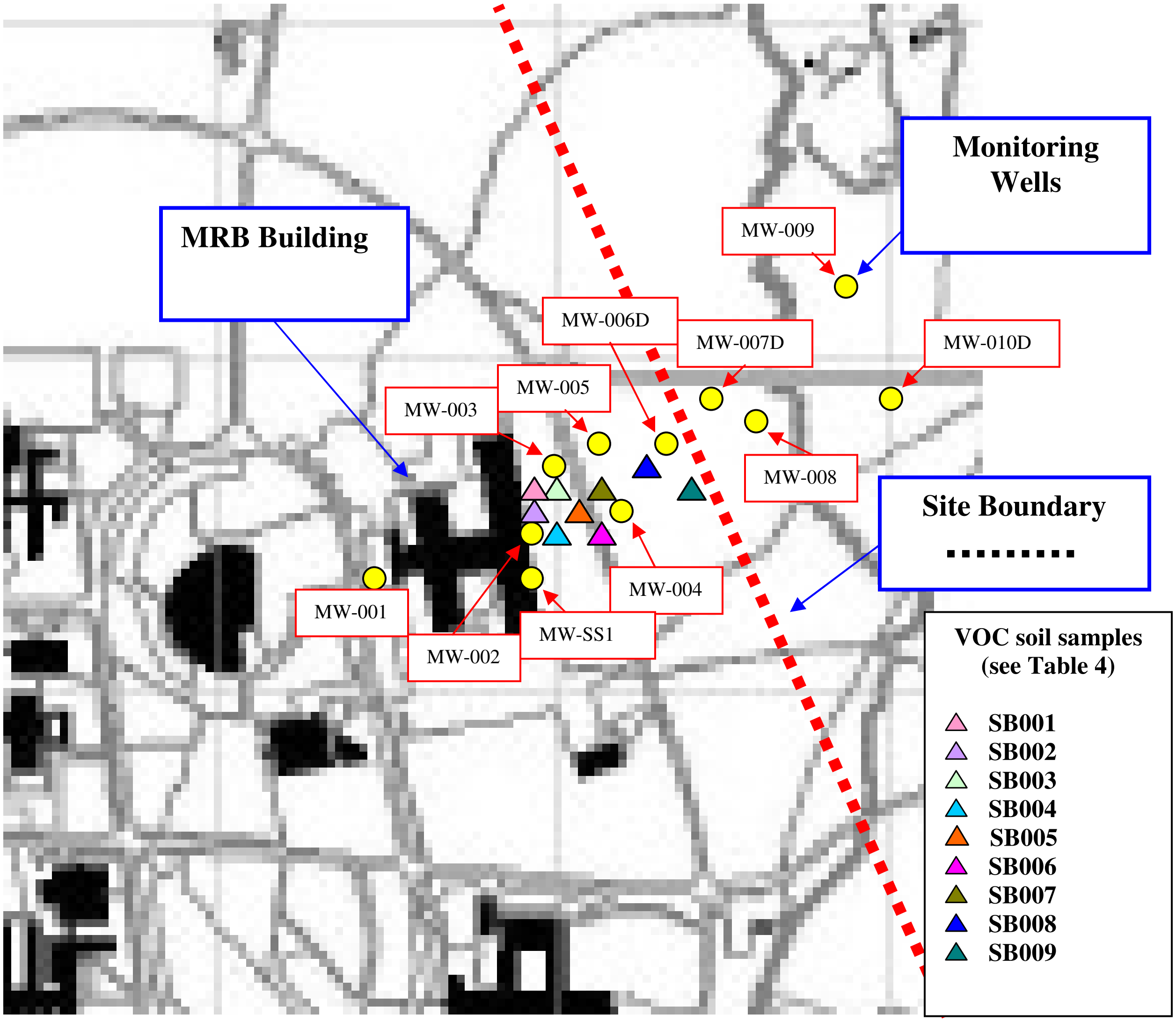


Figure 2, Monitoring Wells and VOC Soil Sampling Locations

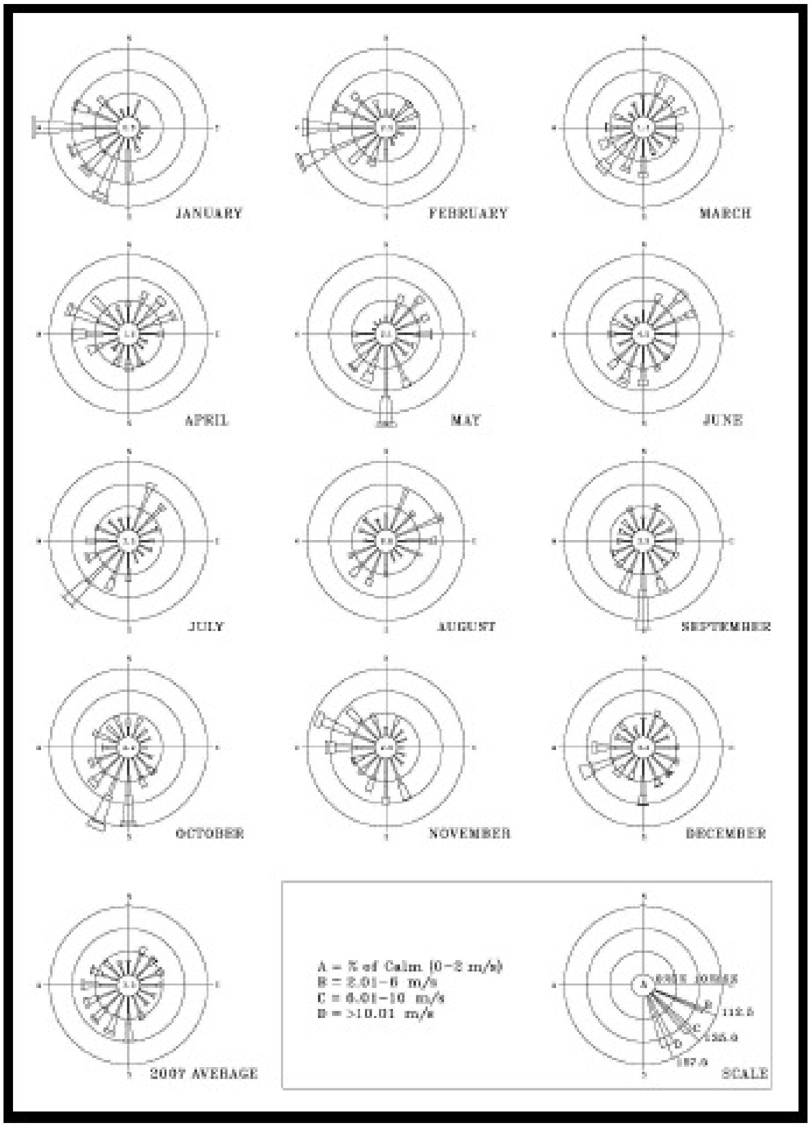


Figure 3, Monthly and Annual Wind Roses at RAFTL

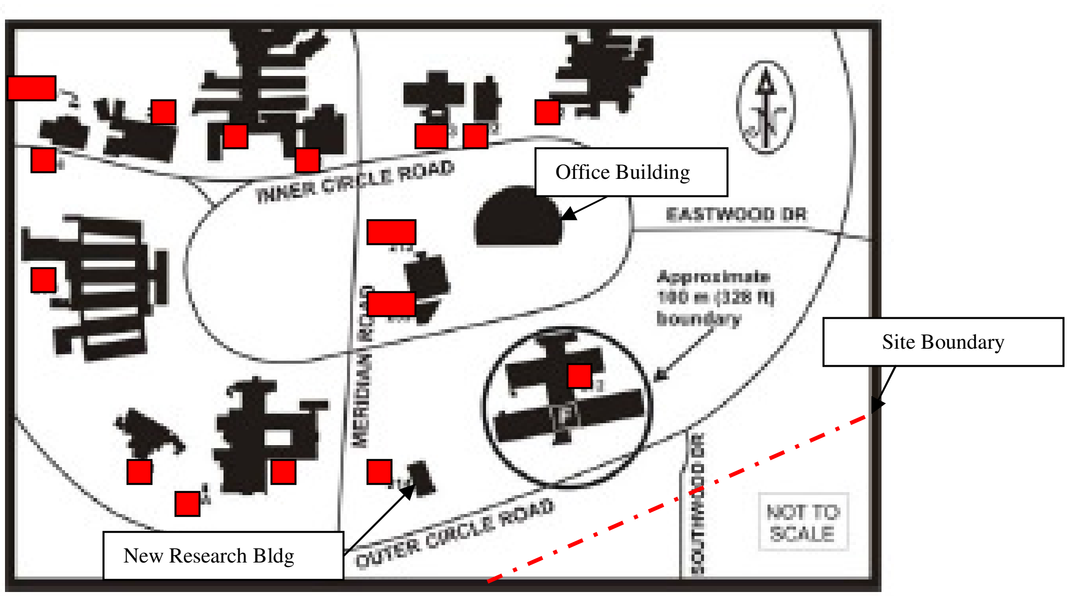


Figure 4, RATLF, Location of MRB. *Distance from MRB Wing F to the nearest office building is approximately 750 feet. Distance from MRB Wing F to the New Research Building is about 450 feet. Distance from MRB Wing F to the closest site boundary is about 600 feet. (Red boxes indicate redacted information)*

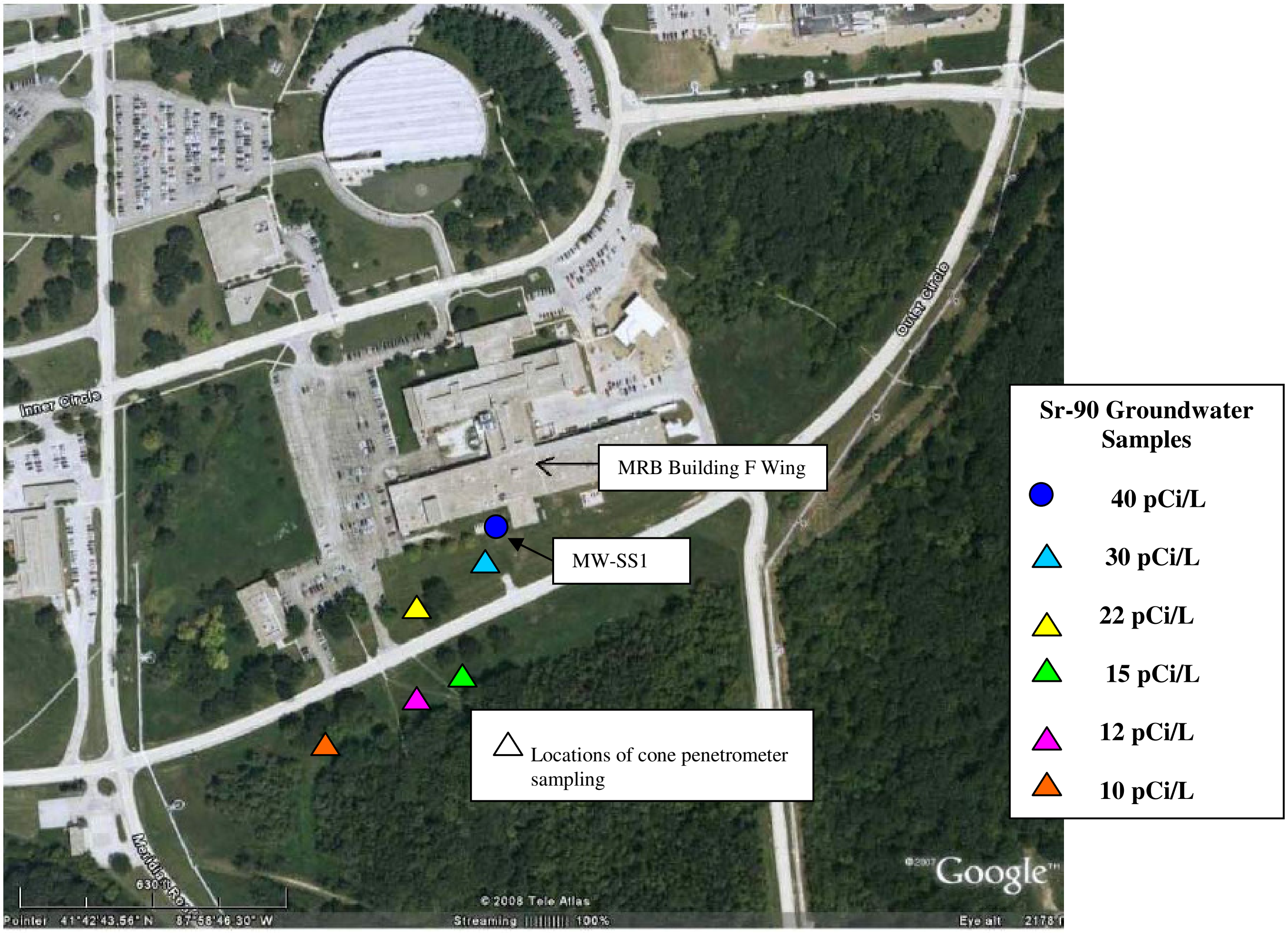


Figure 5, Aerial view, MRB Building including FSMHF

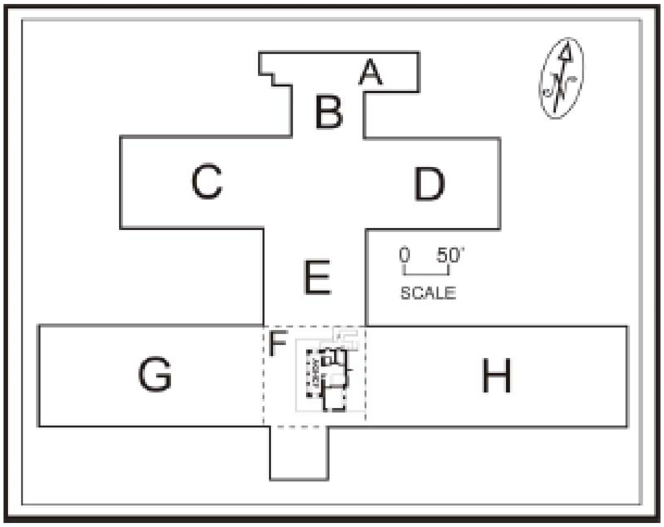


Figure 6, MRB Schematic Layout, showing location of F Wing and FSMHF

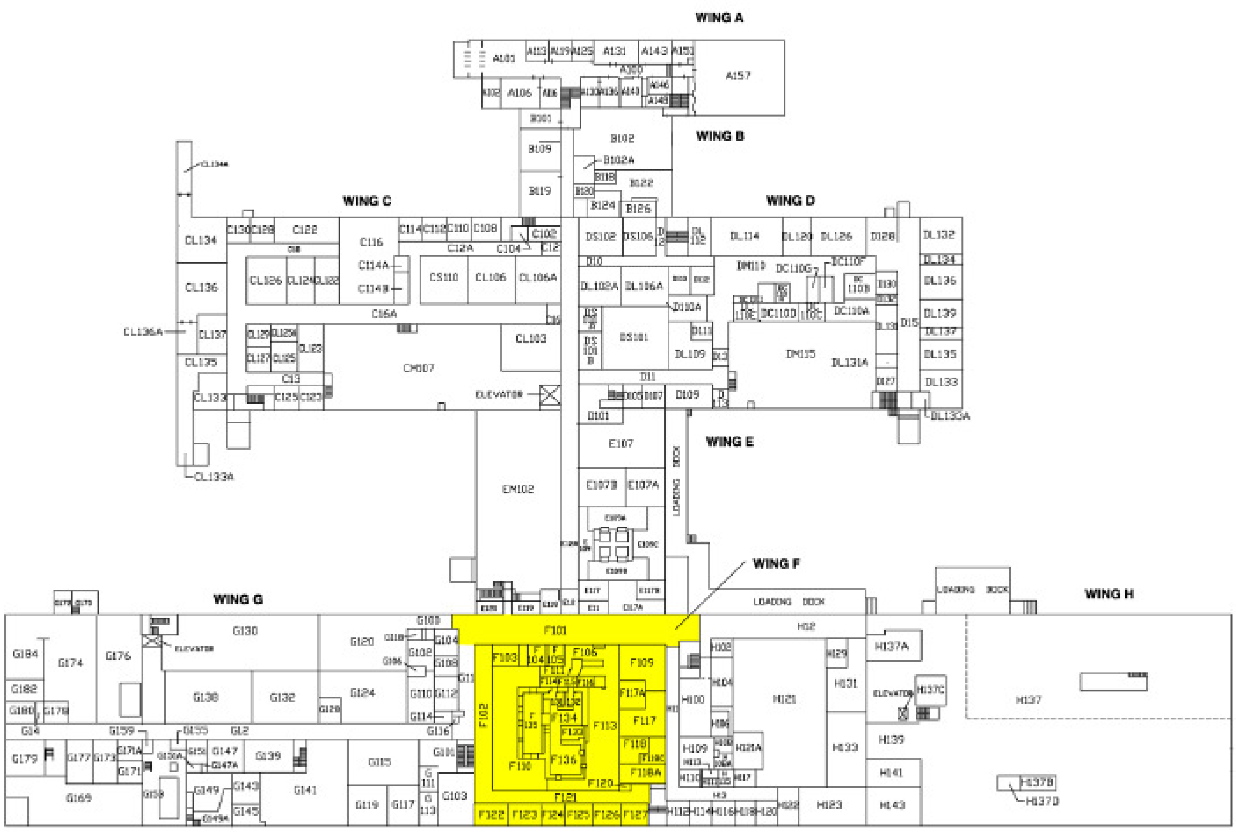


Figure 7: MRB, first floor – F Wing housing the FSMHF is highlighted (scale is 1:1200)

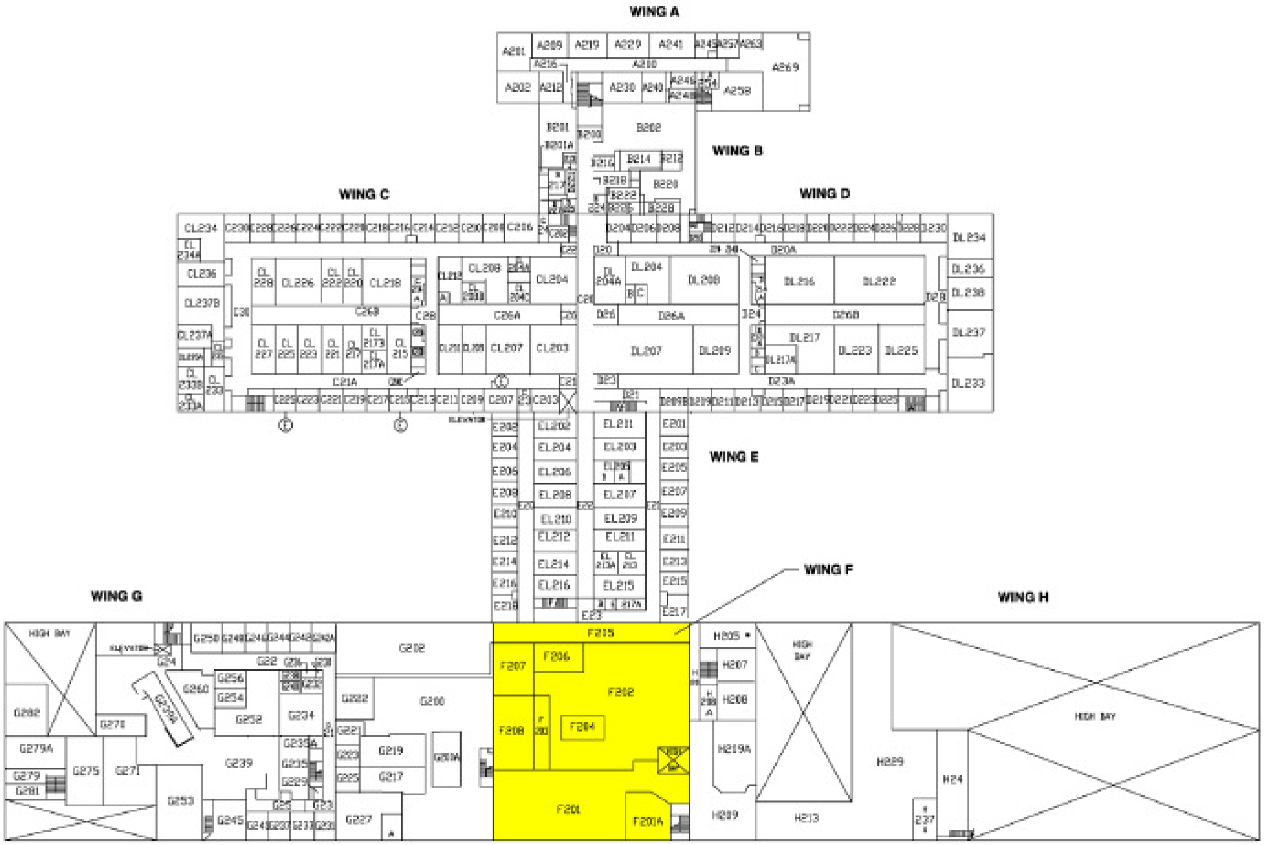
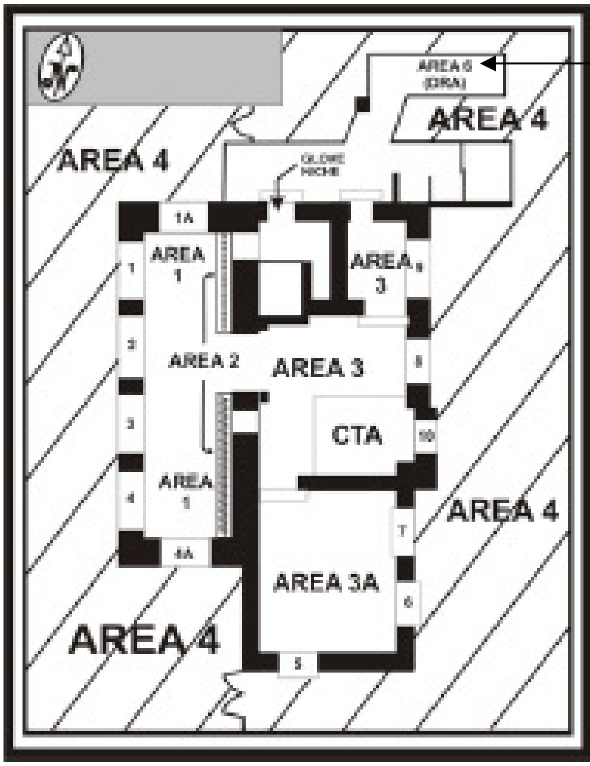


Figure 8: MRB, second floor – area above the FSMHF is highlighted (scale is 1:1200)



Area 6

Figure 9: FSMF areas, both inside and in proximity to hot cell

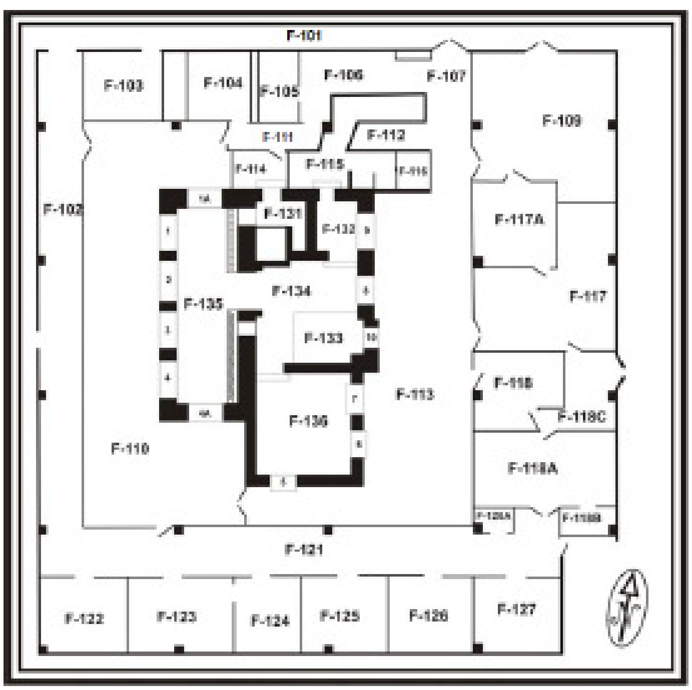


Figure10: Detailed layout of the FSMHF first floor, hot cell and out-of-cell components

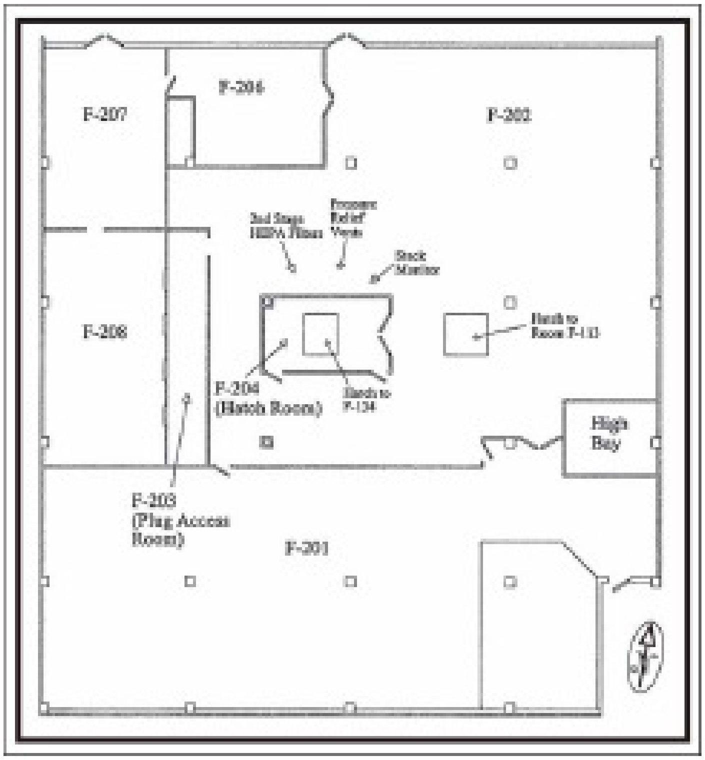


Figure 11: Detailed layout of the FSMHF second floor

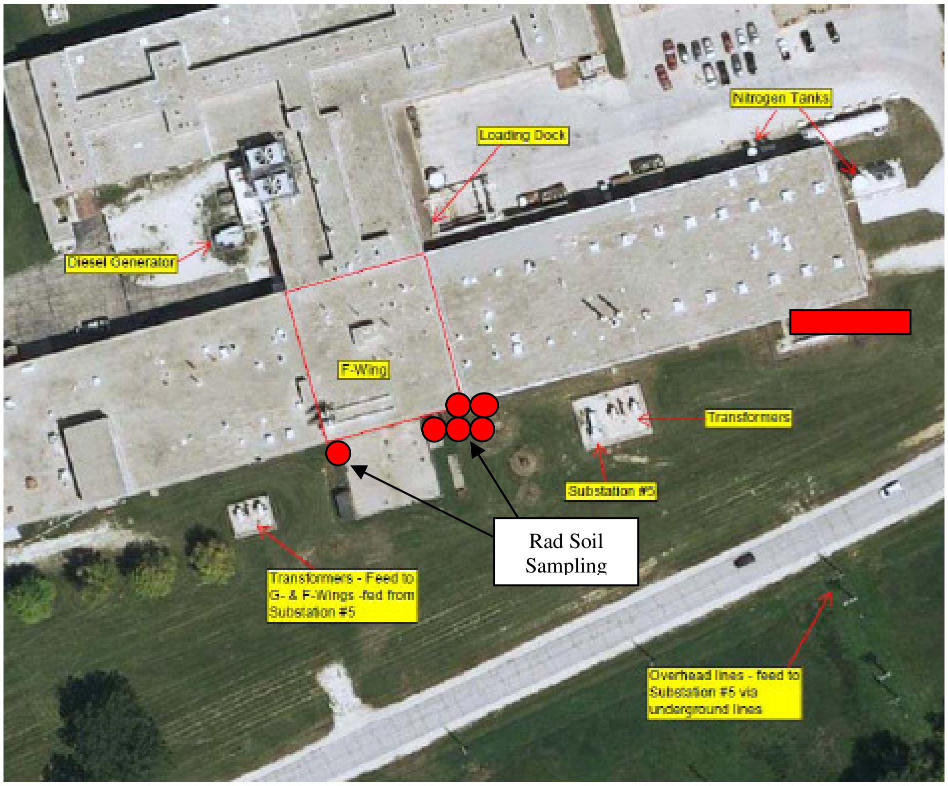


Figure 12, Examples of Support Systems outside F Wing and MRB footprint (approximate areas shown of sampling for rad-contaminated soil)

Table 1 RATFL Weather Summary (Average)

Month	Precipitation (cm)	Temperature (Celsius)
January	5	-5
February	5	-2
March	6	3
April	8	9
May	10	14
June	9	21
July	11	23
August	11	22
September	8	18
October	8	11
November	9	4
December	5	-3
Total	95	Monthly Average 9.5

Table 2, Distance from FSMHF to Site Boundary and Nearest Resident

Direction	Distance to Site Boundary (m)	Distance to Nearest Resident (m)
N	800	2400
NNE	850	2500
NE	1000	900
ENE	750	1300
E	600	2800
ESE	375	2500
SE	200	575
SSE	190	775
S	183	5000
SSW	210	5000
SW	350	2400
WSW	1100	2300
W	1050	2200
WNW	1200	2000
NW	1300	2000
NNW	1150	2000

Table 3, Maximum Concentrations and Expected Target Soil Concentrations, Radionuclides

Radionuclide	**Maximum Concentration (pCi/g)**	**Expected Target Soil Concentrations (pCi/g)**
Strontium -90	1000	15
Americium - 241	860	39
Cesium - 137	680	23
Cobalt - 60	234	10.
Plutonium - 238	90	65

Table 4, Concentrations of Volatile Organic Compounds (VOCs) Found in Subsurface Soil

VOC	**SB-001 (8-9 ft. bgs)** (µg/kg)	**SB-002 (9-10 ft. bgs)** (µg/kg)	**SB-003 (9-10ft. bgs)** (µg/kg)	**SB-004 (5-6 ft. bgs)** (µg/kg)	**SB-005 (8-9 ft. bgs)** (µg/kg)	**SB-006 (4-5 ft. bgs)** (µg/kg)	**SB-007 (7-8 ft. bgs)** (µg/kg)	**SB-008 (5-6 ft bgs)** (µg/kg)	**SB-009 (3-4 ft. bgs)** (µg/kg)
Carbon tetrachloride	300	500	550	100	400	30	120	30	20
Tetrachloroethylene	400	400	325	60	200	50	60	20	10
Trichloroethylene	600	700	600	60	500	50	70	20	5

Table 5, Groundwater in Vicinity of MRB

	Cleanup Objectives (MCLs)	MW-001 9/15/2007	MW-SS1 9/15/2007	MW-002 9/15/2007	MW-003 9/15/2007	MW-004 9/15/2007	MW-005 9/15/2007	MW-006D 10/30/2007	MW-007D 11/15/2007	MW-008 11/15/2007	MW-009 03/25/2008	MW-010D 03/25/2008
Carbon tetrachloride	5 µg/L	U	U	300	250	90	58	26	20	40	10	5
Tetrachloro-ethylene	5 µg/L	U	U	50	25	20	17	10	15	18	7	U
Trichloro-ethylene	5 µg/L	U	U	100	72	60	62	40	28	55	6	U
Sr-90	8 pCi/L	U	U	U	U	U	U	U	U	U	U	U
	Cleanup Objectives (MCLs)	**MW-001 3/25/2008**	**MW-SS1 3/25/2008**	**MW-002 3/25/2008**	**MW-003 3/25/2008**	**MW-004 3/25/2008**	**MW-005 3/25/2008**	**MW-006D 3/25/2008**	**MW-007D 3/25/2008**	**MW-008 3/25/2008**	**MW-009 06/15/2008**	**MW-010D 06/15/2008**
Carbon tetrachloride	5 µg/L	**U**	U	270	225	88	50	20	20	30	6	U
Tetrachloro-ethylene	5 µg/L	**U**	U	35	23	22	14	10	12	16	5	U
Trichloro-ethylene	5 µg/L	**U**	U	75	70	55	50	35	25	40	5	U
Sr-90	8 pCi/L	U	U	U	U	U	U	U	U	U	U	U
	Cleanup Objectives (MCLs)	**MW-001 06/15/2008**	**MW-SS1 06/15/2008**	**MW-002 06/15/2008**	**MW-003 06/15/2008**	**MW-004 06/15/2008**	**MW-005 06/15/2008**	**MW-006D 06/15/2008**	**MW-007D 06/15/2008**	**MW-008 06/15/2008**	**MW-009 09/30/2008**	**MW-010D 09/30/2008**
Carbon tetrachloride	5 µg/L	U	U	260	220	84	50	18	20	28	9	5
Tetrachloro-ethylene	5 µg/L	U	U	35	24	22	14	10	10	16	7	U
Trichloro-ethylene	5 µg/L	U	U	75	60	50	48	32	20	35	5	U
Sr-90	8 pCi/L	U	5	U	U	U	U	U	U	U	U	U
	Cleanup Objectives	**MW-001**	**MW-SS1**	**MW-002**	**MW-003**	**MW-004**	**MW-005**	**MW-006D**	**MW-007D**	**MW-008**	**MW-009**	**MW-010D**

	(MCLs)	09/30/2008	0930/2008	09/30/2008	09/30/2008	09/30/2008	09/30/2008	09/30/2008	09/30/2008	09/30/2008	03/15/2009	03/15/2009
Carbon tetrachloride	5 µg/L	U	U	280	230	88	60	25	20	40	8	U
Tetrachloro-ethylene	5 µg/L	U	U	40	25	20	20	10	15	20	7	U
Trichloro-ethylene	5 µg/L	U	5	72	70	70	60	40	30	60	6	U
Sr-90	8 pCi/L	U	6	U	U	U	U	U	U	U	U	U
	Cleanup Objectives (MCLs)	**MW-001 03/15/2009**	**MW-SS1 03/15/2009**	**MW-002 03/15/2009**	**MW-003 03/15/2009**	**MW-004 03/15/2009**	**MW-005 03/15/2009**	**MW-006D 03/15/2009**	**MW-007D 03/15/2009**	**MW-008 03/15/2009**	**MW-009 06/30/2009**	**MW-010D 06/30/2009**
Carbon tetrachloride	5 µg/L	U	U	260	220	80	50	20	23	35	9	U
Tetrachloro-ethylene	5 µg/L	U	U	35	28	25	14	15	12	20	8	5
Trichloro-ethylene	5 µg/L	U	5	60	65	55	52	35	25	40	5	U
Sr-90	8 pCi/L	U	5	U	U	U	U	U	U	U	U	U
	Cleanup Objectives (MCLs)	**MW-001 06/30/2009**	**MW-SS1 06/30/2009**	**MW-002 06/30/2009**	**MW-003 06/30/2009**	**MW-004 06/30/2009**	**MW-005 06/30/2009**	**MW-006D 06/30/2009**	**MW-007D 06/30/2009**	**MW-008 06/30/2009**	**MW-009 09/30/2009**	**MW-010D 09/30/2009**
Carbon tetrachloride	5 µg/L	U	U	250	240	70	55	24	25	42	5	U
Tetrachloro-ethylene	5 µg/L	U	U	35	25	25	20	18	15	22	6	5
Trichloro-ethylene	5 µg/L	U	5	55	75	58	40	30	20	40	U	U
Sr-90	8 pCi/L	U	40	U	U	U	U	U	U	U	U	U

NOTE: U = Undetect

Table 6

Illinois Class I Groundwater Quality Standards: Organics
(concentrations in μg/L)

Constituent	Standard	Constituent	Standard
Alachlor	2	Ethylene dibromide	0.05
Aldicarb	3	Heptachlor	0.4
Atrazine	3	Heptachlor epoxide	0.2
Benzene	5	Hexachlorocyclopentadiene	50
Benzo(a)pyrene	0.2	Lindane	0.2
Carbofuran	40	Methoxychlor	40
Carbon tetrachloride	5	Monochlorobenzene	100
Chlordane	2	PCBs (decachlorobiphenyl)	0.5
2,4-D	70	Pentachlorophenol	1
Dalapon	200	Phenols	100
1,2-Dibromo-3-chloropropane	0.2	Picloram	500
o-Dichlorobenzene	600	2,4,5-TP (Silvex)	50
p-Dichlorobenzene	75	Simazine	4
1,2-Dichloroethane	5	Styrene	100
Dichloromethane	5	Tetrachloroethylene	5
1,1-Dichloroethene	7	Toluene	1,000
cis-1,2-Dichloroethylene	70	Toxaphene	3
trans-1,2-Dichloroethylene	100	1,1,1-Trichloroethane	200
1,2-Dichloropropane	5	1,1,2-Trichloroethane	0.5
Di(2-ethyhexyl)phthalate	6	1,2,4-Trichlorobenzene	70
Dinoseb	7	Trichloroethylene	5
Endothall	100	Vinyl chloride	2
Endrin	2	Xylenes	10,000
Ethylbenzene	700		

Table 7: Remaining Waste and Materials Inventory (excluding contamination)

Inventory Form	Isotope	Curies	Grams	Quantity
Source	Am-241	1.32E-1	4.13E-2	2
Source	Co-60	2.00E-6	1.82E-9	5
Source	Pu-238	5.55E-3	3.26E-4	1
Residue can (1200 grams total weight)	Pu (Total) U-235	3.46E-3 0.88E-3	2.00E-4 400	25

NOTE: See additional As Built Drawings 1 through 8 and Supplemental Figures 1 through 7.